

Practitioner's Docket No. MPI01-018P1RNM

U.S.S.N. 10/074,527

## IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An isolated nucleic acid molecule selected from the group consisting of:

a) ~~a nucleic acid molecule comprising a nucleotide sequence which is at least 95% identical to the nucleotide sequence of SEQ ID NO:1, or SEQ ID NO:3, wherein said nucleic acid molecule encodes a polypeptide having at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane;~~

~~b) a nucleic acid molecule which encodes a polypeptide comprising an amino acid sequence with at least 90% 95% identity to the amino acid sequence of SEQ ID NO:2, wherein said polypeptide has a glycosyltransferase activity at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane;~~

~~[[c]]b) a nucleic acid molecule which encodes a polypeptide consisting of a fragment of a polypeptide comprising the amino acid sequence of SEQ ID NO:2, wherein the fragment comprises at least 285 contiguous amino acids of SEQ ID NO: 2, wherein said at least 285 contiguous amino acids comprise the glycosyltransferase domain of 33945 (amino acids 139 to 322 of SEQ ID NO:2), and the fragment has a glycosyltransferase activity have at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane; and~~

~~[[d]]c) a nucleic acid molecule which encodes a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence of SEQ ID NO:2, wherein the nucleic acid molecule hybridizes to a nucleic acid molecule comprising SEQ ID NO: 1, 3, or a complement thereof, under hybridization conditions of 0.5M sodium phosphate, 7% SDS at 65°C, followed by one or more washes at 0.2X SSC, 1% SDS at 65°C, wherein said nucleic acid molecule encodes a polypeptide having a glycosyltransferase activity at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane; and~~

Practitioner's Docket No. MPI01-018P1RNM

U.S.S.N. 10/074,527

~~e) a nucleic acid molecule which encodes the glycosyltransferase domain of 33945 (amino acids 139 to 322 of SEQ ID NO:2), wherein the glycosyltransferase domain has the ability to glycosylate a target molecule.~~

2. (Currently Amended) The An isolated nucleic acid molecule of claim 1, which is selected from the group consisting of:

a) a nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO: 1, SEQ ID NO:3; and

b) a nucleic acid molecule which encodes a polypeptide comprising the amino acid sequence of SEQ ID NO:2.

3. (Original) The nucleic acid molecule of claim 1 further comprising vector nucleic acid sequences.

4. (Original) The nucleic acid molecule of claim 1 further comprising nucleic acid sequences encoding a heterologous polypeptide.

5. (Previously Presented) A recombinant host cell which contains the nucleic acid molecule of claim 1.

6. (Previously Presented) The recombinant host cell of claim 5 which is a mammalian recombinant host cell.

7. (Previously Presented) A non-human mammalian recombinant host cell containing the nucleic acid molecule of claim 1.

8. -11. (Canceled)

12. (Currently Amended) A method for producing a 33945 polypeptide selected from the group consisting of:

a) a polypeptide comprising an amino acid sequence with at least 90% 95% identity to the amino acid sequence of SEQ ID NO:2, wherein said polypeptide has a glycosyltransferase

(Page 3 of 11)

Practitioner's Docket No. MPI01-018P1RNM

U.S.S.N. 10/074,527

~~activity at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane;~~

b) a polypeptide ~~comprising~~ consisting of a fragment of the amino acid sequence of SEQ ID NO:2, wherein the fragment comprises at least 285 contiguous amino acids of SEQ ID NO:2, wherein said at least 285 contiguous amino acids comprise the glycosyltransferase domain of 33945 (amino acids 139 to 322 of SEQ ID NO:2), and the fragment has a glycosyltransferase activity ~~have at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane;~~ and

c) a polypeptide comprising a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence of SEQ ID NO:2, wherein the polypeptide is encoded by a nucleic acid molecule which hybridizes to a nucleic acid molecule comprising SEQ ID NO:1, SEQ ID NO:3, or a complement thereof under hybridization conditions of 0.5M sodium phosphate, 7% SDS at 65°C, followed by one or more washes at 0.2X SSC, 1% SDS at 65°C, wherein said polypeptide has a glycosyltransferase activity ~~at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane; and~~

~~d) a polypeptide comprising the glycosyltransferase domain of 33945 (amino acids 139 to 322 of SEQ ID NO:2), wherein the glycosyltransferase domain has the ability to glycosylate a target molecule;~~

comprising culturing the host cell of claim 5 under conditions in which the nucleic acid molecule is expressed.

13. - 17. (Canceled)

18. (Original) A kit comprising a compound which selectively hybridizes to a nucleic acid molecule of claim 1 and instructions for use.

19. - 24. (Canceled)

25. (Previously Presented) A recombinant host cell which expresses the nucleic acid molecule of claim 1.

(Page 4 of 11)

Practitioner's Docket No. MPI01-018P1RNM

U.S.S.N. 10/074,527

26. (Previously Presented) The recombinant host cell of claim 25 which is a mammalian recombinant host cell.

27. (Previously Presented) An isolated nucleic acid molecule, consisting of a nucleic acid sequence selected from the group consisting of:

- a) SEQ ID NO: 1;
- b) SEQ ID NO:3; and
- c) a nucleic acid molecule which encodes a polypeptide having an amino acid sequence consisting of SEQ ID NO:2.

28. (Currently Amended) The isolated nucleic acid molecule of claim 1, wherein the ~~which is selected from the group consisting of:~~

~~a) a nucleic acid molecule comprising the nucleotide sequence which is at least 95% identical to the nucleotide sequence of SEQ ID NO:3, wherein said nucleic acid molecule encodes a polypeptide having at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane; and~~

~~b) a nucleic acid molecule which encodes a polypeptide comprising an amino acid sequence with at least 95% 98% identity to the amino acid sequence of SEQ ID NO:2, wherein said polypeptide has a glycosyltransferase activity at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane.~~

29. (Canceled)

30. (Previously Presented) A recombinant host cell which expresses the nucleic acid molecule of claim 27.

31. (New) A recombinant host cell which expresses the nucleic acid molecule of claim 2.

(Page 5 of 11)

Practitioner's Docket No. MPI01-018P1RNM

U.S.S.N. 10/074,527

32. (New) The nucleic acid molecule of claim 2, further comprising vector nucleic acid sequences.

33. (New) The nucleic acid molecule of claim 2, further comprising nucleic acid sequences encoding a heterologous polypeptide.

34. (New) The method of claim 12, wherein the polypeptide comprises SEQ ID NO:2.

35. (New) The method of claim 12, wherein the polypeptide is a fusion protein linked to a non-33945 polypeptide.